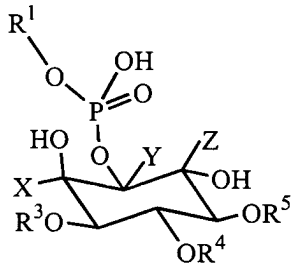
AMENDMENT

Amendments to the Claims

Previously, claims 21-56 were pending in the application and have been examined. Claims 22, 23, 31, 34, 35, 44-46 have been allowed. The present document amends claims 21, 24-27, and 53-56. Original claims 28-30, 32, 33, 36-43, and 47-52 have been retained unchanged. No claims have been added. According to 37 C.F.R. 1.116, after entry of the present amendment, the status of the claims in the case is as follows:

1-20. (Canceled).

21. (Currently amended) A substantially purified sphingo-phosphoinositol analogue of a phosphoinositide compound that comprises at least a first stable or radioactive isotope label within the inositol, ceramide or sphingosine residue of said phosphoinositide compound; wherein said stable or radioactive isotope label is selected from the group consisting of ^{2}H, ^{3}H, ^{32}P, ^{33}P and ^{35}S and wherein said phosphoinositide compound has the *myo*-inositol-based structure:



wherein:

R^1 = Ceramide residue ~~or derivative of ceramide residue~~, or

Sphingosine residue ~~or derivative of sphingosine residue~~;

R^3, R^4, R^5 = H or $Q(T)(OH)_2$;

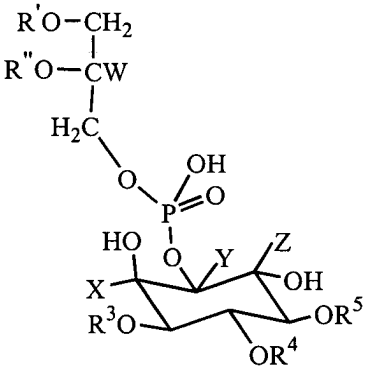
Q = P, ^{32}P or ^{33}P;

T = O, S or ^{35}S;

W, X, Y, Z = ^{2}H, ^{3}H or H; and

wherein said structure contains at least one ^{2}H, ^{3}H, ^{32}P, ^{33}P or ^{35}S as isotopic label.

22. (Previously presented) A substantially purified C-phosphonate analogue of a phosphoinositide compound that comprises at least a first stable or radioactive isotope label within the inositol or glycerol residue of said phosphonate analogue of the phosphoinositide compound; wherein said stable or radioactive isotope label is selected from the group consisting of ^{2}H, ^{3}H, ^{32}P, ^{33}P and ^{35}S and wherein said phosphoinositide compound has the *myo*-inositol-based structure:



wherein:

R', R" = fattyacyl, alkyl or H;

R^3, R^4, R^5 = H or $Q(T)(OH)_2$;

Q = P, ^{32}P or ^{33}P;

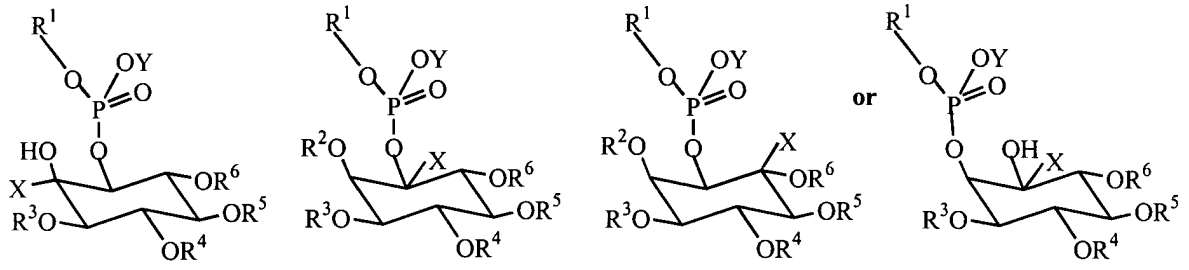
T = O, S or ^{35}S;

W, X, Y, Z = ^{2}H, ^{3}H or H; and

wherein said structure contains at least one ^{2}H, ^{3}H, ^{32}P, ^{33}P or ^{35}S as isotopic label, and wherein an O-P bond of phosphate moiety of said phosphoinositide compound structure is replaced by a C-P bond.

23. (Original) The C-phosphonate phosphoinositide compound of claim 22, wherein said phosphoinositide compound comprises at least a first (poly)unsaturated fattyacyl residue.

24. (Currently amended) A synthetic intermediate of an isotopically labelled sphingo-phosphoinositol analogue of a phosphoinositide compound, said synthetic intermediate comprising temporary protecting groups at hydroxyl, nitrogen and phosphate positions other than the position into which the isotopic label is to be introduced; wherein said synthetic intermediate has one of the *myo*-inositol-based structures:



wherein:

X = H, ^{2}H or ^{3}H; Y = alkyl, CH_3, H or (O protecting group);

R^1 = Ceramide residue ~~or derivative of ceramide residue~~, or

Sphingosine residue ~~or derivative of sphingosine residue~~;

R^3, R^4, R^5 = (OH protecting group), (Q(T)(O protecting group)$_2$),

(Q(T)(OH)(O protecting group) or (Q(T)(OH)$_2$);

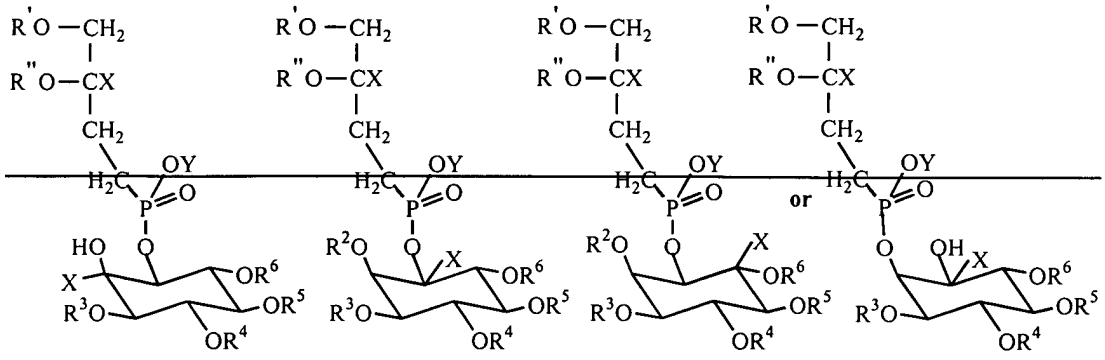
R^2, R^6 = H or (OH protecting group);

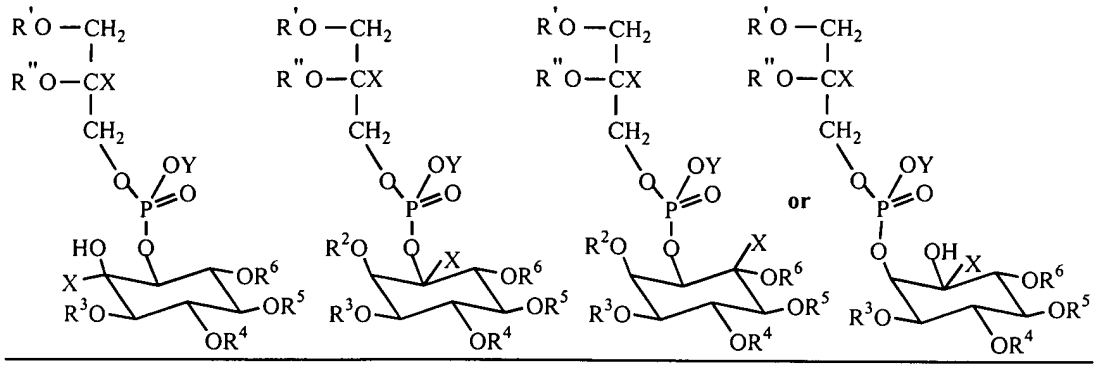
Q = P, ^{32}P or ^{33}P;

T = O, S or ^{35}S; and

wherein said structure contains at least one ^{2}H, ^{3}H, ^{32}P, ^{33}P or ^{35}S as isotopic label.

25. (Currently amended) A synthetic intermediate of an isotopically labelled C-phosphonate analogue of a phosphoinositide compound, said synthetic intermediate comprising temporary protecting groups at hydroxyl, phosphonate and phosphate positions other than the position into which the isotopic label is to be introduced; wherein said synthetic intermediate has one of the *myo*-inositol-based structures:





wherein:

X = H, ^{2}H or ^{3}H; Y = alkyl, CH_3, H or (O protecting group);

R', R" = fattyacyl, alkyl or H;

R^3, R^4, R^5 = (OH protecting group), (Q(T)(O protecting group)$_2$),

(Q(T)(OH)(O protecting group) or (Q(T)(OH)$_2$);

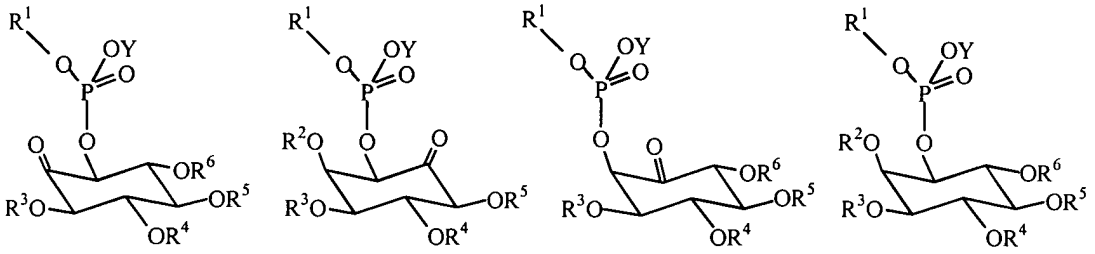
R^2, R^6 = H or (OH protecting group);

Q = P, ^{32}P or ^{33}P;

T = O, S or ^{35}S; and

wherein said structure contains at least one ^{2}H, ^{3}H, ^{32}P, ^{33}P or ^{35}S as isotopic label; and wherein an O-P bond of phosphate moiety of said phosphoinositide compound structure is replaced by a C-P bond.

26. (Currently amended) A synthetic precursor of a synthetic intermediate of an isotopically labelled sphingo-phosphoinositol analogue of a phosphoinositide compound, wherein said synthetic precursor has a ketone group at the position into which an isotopic ^{2}H or ^{3}H label is to be introduced; wherein said synthetic precursor has one of the structures:



wherein:

Y = alkyl, CH_3 or H;

R^1 = Ceramide residue ~~or derivative of ceramide residue~~, or

Sphingosine residue ~~or derivative of sphingosine residue~~;

R^3, R^4, R^5 = (OH protecting group), (Q(T)(O protecting group)$_2$),

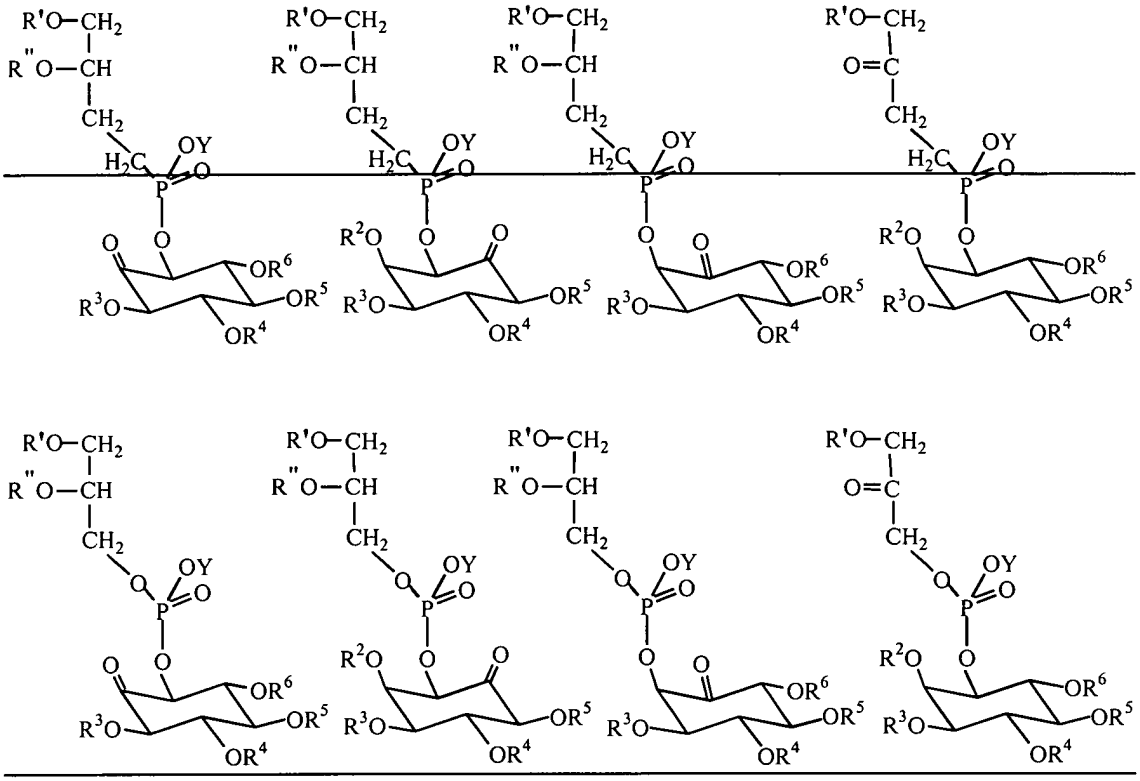
(Q(T)(OH)(O protecting group) or (Q(T)(OH)$_2$);

R^2, R^6 = H or (OH protecting group); and

Q = P, ^{32}P or ^{33}P; and

T = O, S or ^{35}S.

27. (Currently amended) A synthetic precursor of a synthetic intermediate of an isotopically labelled C-phosphonate analogue of a phosphoinositide compound, wherein said synthetic precursor has a ketone group at the position into which an isotopic ^2H or ^3H label is to be introduced; wherein said synthetic precursor has one of the structures:



wherein:

Y = alkyl, CH_3 or H;

R', R" = fattyacyl, alkyl or H;

R^3, R^4, R^5 = (OH protecting group), (Q(T)(O protecting group)$_2$),

(Q(T)(OH)(O protecting group) or (Q(T)(OH)$_2$);

R^2, R^6 = H or (OH protecting group); and

Q = P, ^{32}P or ^{33}P; and

T = O, S or ^{35}S;

and wherein an O-P bond of phosphate moiety of said phosphoinositide compound structure is replaced by a C-P bond.

28. (Original) The synthetic intermediate of claim 25, wherein said synthetic intermediate comprises at least a first (poly)unsaturated fattyacyl residue.

29. (Original) The synthetic precursor of claim 27, wherein said synthetic precursor comprises at least a first (poly)unsaturated fattyacyl residue.

30. (Original) The sphingo-phosphoinositol phosphoinositide compound of claim 21, wherein said phosphoinositide compound further comprises at least a second stable or radioactive isotope label within the ceramide or sphingosine residues of said sphingo-phosphoinositol phosphoinositide compound.

31. (Original) The C-phosphonate phosphoinositide compound of claim 22, wherein said phosphoinositide compound further comprises at least a second stable or radioactive isotope label within the alkyl or fattyacyl residues of said C-phosphonate phosphoinositide compound.

32. (Original) The sphingo-phosphoinositol phosphoinositide compound of claim 21, wherein said phosphoinositide compound has a structure based on 1D-*myo*-inositol.

33. (Original) The sphingo-phosphoinositol phosphoinositide compound of claim 21, wherein said phosphoinositide compound has a structure based on 1L-*myo*-inositol.

34. (Original) The C-phosphonate phosphoinositide compound of claim 22, wherein said phosphoinositide compound has a structure based on 1D-*myo*-inositol.

35. (Original) The C-phosphonate phosphoinositide compound of claim 22, wherein said phosphoinositide compound has a structure based on 1L-*myo*-inositol.

36. (Original) The synthetic intermediate of claim 24, wherein said synthetic intermediate has a structure based on 1D-*myo*-inositol.

37. (Original) The synthetic intermediate of claim 24, wherein said synthetic intermediate has a structure based on 1L-*myo*-inositol.

38. (Original) The synthetic intermediate of claim 25, wherein said synthetic intermediate has a structure based on 1D-*myo*-inositol.

39. (Original) The synthetic intermediate of claim 25, wherein said synthetic intermediate has a structure based on 1L-*myo*-inositol.

40. (Original) The synthetic precursor of claim 26, wherein said synthetic precursor has a structure based on 1D-*myo*-inositol.

41. (Original) The synthetic precursor of claim 26, wherein said synthetic precursor has a structure based on 1L-*myo*-inositol.

42. (Original) The synthetic precursor of claim 27, wherein said synthetic precursor has a structure based on 1D-*myo*-inositol.

43. (Original) The synthetic precursor of claim 27, wherein said synthetic precursor has a structure based on 1L-*myo*-inositol.

44. (Original) The C-phosphonate phosphoinositide compound of claim 22, wherein said phosphoinositide compound has a structure based on *sn*-glycero-3-phospho as glycerol residue.

45. (Original) The C-phosphonate phosphoinositide compound of claim 22, wherein said phosphoinositide compound has a structure based on *sn*-glycero-1-phospho as glycerol residue.

46. (Original) The C-phosphonate phosphoinositide compound of claim 22, wherein said phosphoinositide compound has a structure based on *rac*-glycero-3-phospho as glycerol residue.

47. (Original) The synthetic intermediate of claim 25, wherein said synthetic intermediate has a structure based on *sn*-glycero-3-phospho as glycerol residue.

48. (Original) The synthetic intermediate of claim 25, wherein said synthetic intermediate has a structure based on *sn*-glycero-1-phospho as glycerol residue.

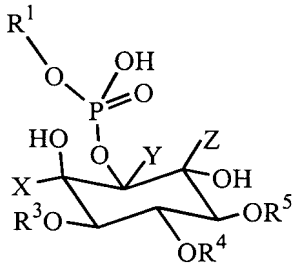
49. (Original) The synthetic intermediate of claim 25, wherein said synthetic intermediate has a structure based on *rac*-glycero-3-phospho as glycerol residue.

50. (Original) The synthetic precursor of claim 27, wherein said synthetic precursor has a structure based on *sn*-glycero-3-phospho as glycerol residue.

51. (Original) The synthetic precursor of claim 27, wherein said synthetic precursor has a structure based on *sn*-glycero-1-phospho as glycerol residue.

52. (Original) The synthetic precursor of claim 27, wherein said synthetic precursor has a structure based on *rac*-glycero-3-phospho as glycerol residue.

53. (Currently amended) A substantially purified sphingo-phosphoinositol phosphoinositide compound that comprises at least a first stable or radioactive isotope label within the inositol, ceramide or sphingosine residue of said phosphoinositide compound; wherein said stable or radioactive isotope label is selected from the group consisting of ^{2}H, ^{3}H, ^{32}P, ^{33}P and ^{35}S; wherein said phosphoinositide compound has the *myo*-inositol-based structure:



wherein:

R^1 = Ceramide residue ~~or derivative of ceramide residue~~, or

Sphingosine residue ~~or derivative of sphingosine residue~~;

R^3, R^4, R^5 = H or $Q(T)(OH)_2$;

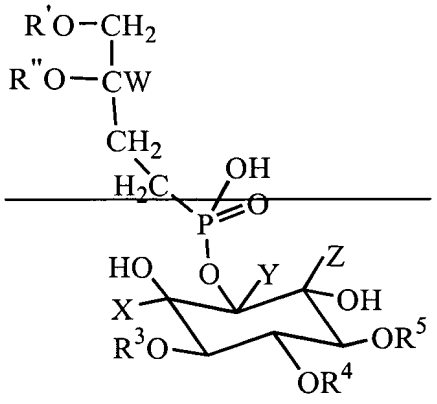
Q = P, ^{32}P or ^{33}P;

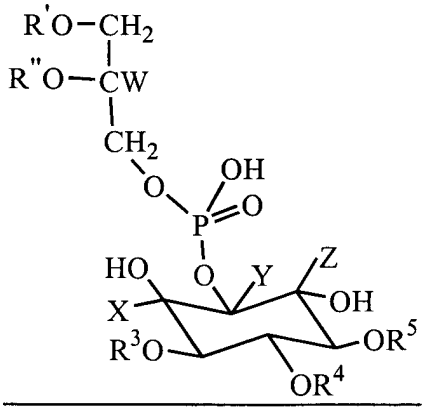
T = O, S or ^{35}S;

W, X, Y, Z = ^{2}H, ^{3}H or H; and

wherein said structure contains at least one ^{2}H, ^{3}H, ^{32}P, ^{33}P or ^{35}S as isotopic label and further comprises temporary protecting groups at hydroxyl and phosphate positions other than the position of at least a first stable or radioactive ^{2}H and ^{3}H isotope label.

54. (Currently amended) A substantially purified C-phosphonate phosphoinositide compound that comprises at least a first stable or radioactive isotope label within the inositol or glycerol residue of said phosphoinositide compound; wherein said stable or radioactive isotope label is selected from the group consisting of ^{2}H, ^{3}H, ^{32}P, ^{33}P and ^{35}S; wherein said phosphoinositide compound has the *myo*-inositol-based structure:





wherein:

R', R" = fattyacyl, alkyl or H;

R^3, R^4, R^5 = H or $Q(T)(OH)_2$;

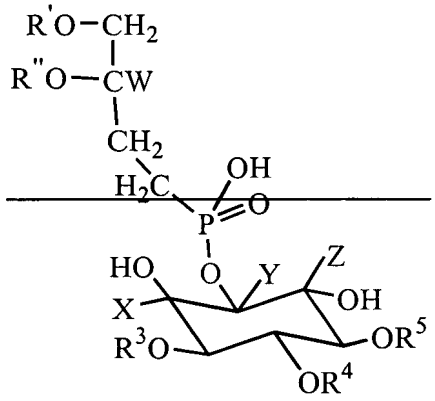
Q = P, ^{32}P or ^{33}P;

T = O, S or ^{35}S;

W, X, Y, Z = ^2H, ^3H or H; and

wherein said structure contains at least one ^2H, ^3H, ^{32}P, ^{33}P or ^{35}S as isotopic label and further comprises temporary protecting groups at hydroxyl and phosphate positions other than the position of at least a first stable or radioactive ^2H and ^3H isotope label; and wherein an O-P bond of phosphate moiety of said phosphoinositide compound structure is replaced by a C-P bond.

55. (Currently amended) A C-phosphonate analogue phosphoinositide compound of claim 22 wherein the C-P bond linking is to the glycerol residue. ~~O-P bond link to glycerol in phosphoinositide structure is replaced by a C-P bond, and wherein the said C-phosphonate analogue phosphoinositide compound has the structure:~~



~~wherein:~~

~~R', R" = fattyacyl, alkyl or H;~~

~~R^3, R^4, R^5 = H or $Q(T)(OH)_2$;~~

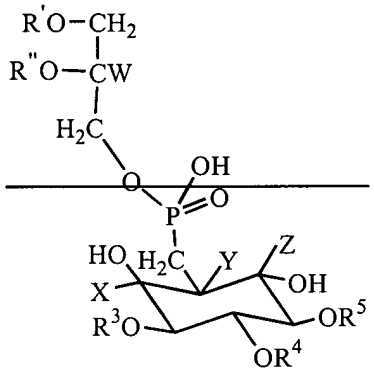
~~Q = P, ^{32}P or ^{33}P;~~

~~T = O, S or ^{35}S;~~

~~W, X, Y, Z = ^{2}H, ^{3}H or H; and~~

~~wherein said structure contains at least one ^{2}H, ^{3}H, ^{32}P, ^{33}P or ^{35}S as isotopic label.~~

56. (Currently amended) A C-phosphonate analogue phosphoinositide compound of claim 22 wherein the C-P bond linking is to the inositol residue. ~~55 wherein the O-P bond link to inositol in phosphoinositide structure is replaced by a C-P bond, and wherein the said phosphonate analogue phosphoinositide compound has the structure:~~



~~wherein:~~

~~R', R" = fattyacyl, alkyl or H;~~

~~R^3, R^4, R^5 = H or $Q(T)(OH)_2$;~~

~~Q = P, ^{32}P or ^{33}P;~~

~~T = O, S or ^{35}S;~~

~~W, X, Y, Z = ^{2}H, ^{3}H or H; and~~

~~wherein said structure contains at least one ^{2}H, ^{3}H, ^{32}P, ^{33}P or ^{35}S as isotopic label.~~